



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,032

04/27/2007

Stuart Grossart

4590-544

9133

33308 7590 02/27/2009
LOWE HAUPTMAN & BERNER, LLP
1700 DIAGONAL ROAD, SUITE 300
ALEXANDRIA, VA 22314

EXAMINER

LOPEZ, FRANK D

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

02/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/583,032	GROSSART, STUART	
	Examiner	Art Unit	
	F. Daniel Lopez	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 34-64 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 34-64 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

It is unclear how the fluid supply means supplies fluid simultaneously to both the extract and retract chambers at substantially the same pressure (claim 34 last 3 lines and 47 last 4 lines). The fluid supply is understood to include the pumps A, B and accumulator (17). The pumps allow fluid to be supplied to the extend chamber (10) from the retract chamber (7) and the accumulator (17); or from the extend chamber to the retract chamber and the accumulator, but don't simultaneously supply fluid to both chambers. It is understood that the pressures in extend and retract chambers are substantially the same pressure, but this does not mean that the fluid supply means supplies fluid to both chambers simultaneously.

It is unclear how the pressure of the fluid simultaneously supplied to extract and retract chambers is determined according to the position/extension of the actuator rod (claim 62 and 64). This limitation is interpreted as meaning that the pressure in the accumulator sets the pressure in the chambers, so that, as the piston moves back and forth, the pressure in the accumulator is adjusted to change the pressure in the chambers. It is clear that the pump 24 and the landing valve 28 of fig 4 could be used to increase and decrease, respectively, the pressure in the accumulator, but there is no

Art Unit: 3745

indication that the control of the pump or the landing valve is tied to the position of the piston. If this limitation means that as the piston moves back and forth, the volume of fluid in the accumulator changes, thereby changing the pressure, Applicant should so state, and clarify this issue.

Claim Rejections - 35 USC § 112

Claims 34-64 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 4-5 elements are called extracted and retracted chambers, whereas in line 7-8 they are called retract and extend chambers. The claims must be amended to use only one name for each of the extend and retract chambers. In claim 34 and 47 line 7-8, it is unclear how "a fluid supply means arranged to supply fluid simultaneously to both the extend and retract chambers at substantially the same pressure". See discussion under objection to the specification.

In claim 46 line 1-3 "a fluid supply operable to be in fluid communication with...said first fluid transfer means...and said actuator chamber" appears to be wrong, since the supply (24) is only in communication with the fluid vessel (17) and the second transfer means (B), but not the chamber or the first transfer means.

In claim 56 line 4 "said held fluid" has no antecedent basis (suggest that claim 56 depend from claim 55).

In claim 57 line 1-2 "holding said held fluid in communication with said extend chamber and said retract chamber" is wrong, since the held fluid is in the accumulator and therefore not in communication with the chambers.

In claim 62 and 64 line 1-3, it is unclear how the "pressure of the pressurized fluid simultaneously supplied to extract and retract chambers is determined according to the position/extension of the actuator rod". See discussion under objection to the specification.

Claims not specifically mentioned are indefinite, since they depend from one of the above claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 34-45, 47-57 and 61-64, inasmuch as they are definite, are rejected under 35 U.S.C. § 102(b) as being anticipated by Hiraki et al. Hiraki et al discloses an actuator and method of using comprising a piston in an actuator chamber defining an extend (PL) and a retract (PS) chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first reversible pump (P1) arranged to reversibly transfer fluid between the extend and retract chamber and a second reversible pump (P2) arranged to transfer fluid between the extend chamber and a hydraulic accumulator (10).

Claims 34-38, 47-57 and 61-64, inasmuch as they are definite, are rejected under 35 U.S.C. § 102(b) as being anticipated by Nikolaus. Nikolaus discloses an actuator and method of using comprising a piston (18) in an actuator chamber defining an extend (13) and a retract (11) chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first reversible pump (15) arranged to reversibly transfer fluid between the extend and retract chamber and a hydraulic accumulator (16) holding fluid transferred from the extend chamber.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3745

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claim 46 is rejected under 35 U.S.C. § 103 as being unpatentable over Hiraki et al in view of Nikolaus. Hiraki et al discloses all of the elements of claim 46, as discussed in the above 102 rejection; but does not disclose a fluid supply in communication with the accumulator and the second pump.

Nikolaus teaches, for an actuator comprising a piston (18) in an actuator chamber defining an extend (13) and a retract (11) chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first reversible pump (15) arranged to reversibly transfer fluid between the extend and retract chamber and a hydraulic accumulator (16) holding fluid transferred from the extend chamber; that a fluid supply is connected to the accumulator, for the purpose of maintaining a constant pressure in the accumulator (column 3 line 63-65).

Since Hiraki et al and Nikolaus are both from the same field of endeavor, the purpose disclosed by Nikolaus would have been recognized in the pertinent art of Hiraki et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to connect a fluid supply is to the accumulator of Hiraki et al, as taught by Nikolaus, for the purpose of maintaining a constant pressure in the accumulator. Since the second pump is connected to the accumulator, the supply would also be connected to the second pump.

Claims 34-45 and 47-64 are rejected under 35 U.S.C. § 103 as being unpatentable over Applicant's admitted prior art in view of Hiraki et al and MacLeod. Applicant's admitted prior art discloses a vehicle motion simulator and method of using comprising a motion platform (3, fig 1) moved by actuators (2) which are controlled by servo valves (page 1 line 25-26); but does not disclose that the actuator includes a piston in an actuator chamber defining an extend and a retract chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first

Art Unit: 3745

reversible pump arranged to reversibly transfer fluid between the extend and retract chamber and a second reversible pump arranged to transfer fluid between the extend chamber and a hydraulic accumulator.

Hiraki et al teaches that an actuator controlled by a reversible pump and method of using can include a piston in an actuator chamber defining an extend (PL) and a retract (PS) chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first reversible pump (P1) arranged to reversibly transfer fluid between the extend and retract chamber and a second reversible pump (P2) arranged to transfer fluid between the extend chamber and a hydraulic accumulator (10).

MacLeod teaches replacing a control of an actuator (54, 56) with a servo valve (34, fig 2), with a control using a reversible pump (72, fig 3), for the purpose of eliminating complex and costly intervening valving (column 1 line 25-28), and to have a system that is accurate, relatively insensitive to leakage and reliable in use (column 1 line 32-34)

Since the actuator of Applicant's admitted prior art is controlled by a servo valve; since MacLeod teaches advantages of using a reversible pump, instead of a servo valve, to control an actuator and since Hiraki et al teaches details of a reversible pump control of an actuator; it would have been obvious at the time the invention was made to one having ordinary skill in the art to control the actuator of Applicant's admitted prior art, such that the actuator includes a piston in an actuator chamber defining an extend and a retract chamber, such that an actuator rod extends through the retract chamber; a fluid supply means, including a first reversible pump arranged to reversibly transfer fluid between the extend and retract chamber and a second reversible pump arranged to transfer fluid between the extend chamber and a hydraulic accumulator, as taught by Hiraki et al, for the purpose of eliminating complex and costly intervening valving, and to have a system that is accurate, relatively insensitive to leakage and reliable in use, as taught by MacLeod.

Art Unit: 3745

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:00 AM -4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.

/F. Daniel Lopez/

F. Daniel Lopez
Primary Examiner
Art Unit 3745
February 27, 2009